II. REMARKS

These remarks are in response to the Office Action dated September 28, 2001. Upon entry of the amendment, claims 1-12 will be pending. A marked-up copy showing the amendment to the specification and the claims is attached hereto as Exhibit A.

A. Regarding the Amendments to the claims

Claims 7 and 9 have been amended. No new matter has been added with the amendments.

B. Regarding the Specification

The specification was objected to for failing to include deposit information and for failing to indicate that pBLUESCRIPT is a trademark. The specification has been amended to delete paragraphs referring to deposit information and to indicate that pBLUESCRIPT is a registered trademark.

C. Claim Rejection under 35 U.S.C. 112, Second Paragraph

Claims 1-12 were rejected under 35 U.S.C. 112, second paragraph as being indefinite because it is alleged that the meaning of the term "alpha-galactose bond" is unknown and it is not known whether an alpha-galactose bond is a bond cleaved by an alpha-galactosidase. Based on the specification, a skilled artisan would recognize that the term "alpha-galactose bond" refers to a bond of an alpha-galactose residue that is hydrolyzed by α-galactosidase. The term itself indicates that it is a bond of a galactose residue. The claims indicate that an "alpha-galactose bond" is a bond that is hydrolyzed by the enzyme of SEQ ID NO:4. The specification in Example 3, indicates that the enzyme of the invention is an α-galactosidase capable of hydrolyzing a 4-methylumelliferyl α-galactoside substrate to yield a product with increased fluorescence. Therefore, an ordinary artisan would recognize that the meaning of the term "alpha-galactose bond" refers to a bond of an alpha-galactose residue, that is hydrolyzed by α-galactosidase.

Claim 7 was rejected as allegedly being unclear as to where the alpha-galactose bond is located. Claim 7 was amended to correct the typographical error in the original claim 7, indicating that the raffinose is in raw beet sugar. One of ordinary skill recognizes that the amendment to claim 7 merely corrects a typographical error in the original claim 7 and does not change the intended scope.

Claim 8 was rejected as allegedly being unclear as to what the combination would include. It appears that this rejection was actually directed at claim 9, since claim 8 does not recite a compound from a lentil or bean family member. Claim 9 as amended clarifies that the composition includes a compound found in a member of the lentil family and a compound found in a member of the bean family. One of ordinary skill in the art recognizes that the amendment to claim 9 merely clarifies the intended meaning of the claim as filed and does not further limit the claim.

D. Double Patenting

Claims 1-9 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 5,958,751. Applicants respectfully traverse this rejection but request that the rejection be held in abeyance until such time as the Examiner indicates that the present claims are allowable.

In view of the amendments and the above remarks, it is submitted that the claims are in condition for allowance and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this application.

Please charge any additional fees, or make any credits, to Deposit Account No. 50-1355.

Respectfully submitted,

Date: February 27, 2002

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Enclosures: Exhibit A

EXHIBIT A

MARKED-UP COPY OF THE SPECIFICATION AND THE CLAIMS SHOWING THE AMENDMENTS

A. In the Specification

At page 1 of the specification, please delete the final paragraph which reads as follows:

In accordance with another aspect of the present invention there are provided isolated nucleic acid molecules encoding mature polypeptides expressed by the DNA contained in ATCC Deposit No. _____.

At page 4 of the specification, please delete the first paragraph which reads as follows:

In accordance with another aspect of the present invention, there is provided an isolated polynucleotide encoding the enzyme of the present invention. The deposited material is a genomic clone comprising DNA encoding an enzyme of the present invention. As deposited with the American Type Culture Collection, 12301 Parklawn Drive, Rockville, Maryland 20852, USA, the deposited material is assigned ATCC Deposit No. _____.

At page 14 of the specification, please amend the first full paragraph as follows:

More particularly, the present invention also includes recombinant constructs comprising one or more of the sequences as broadly described above. The constructs comprise a vector, such as a plasmid or viral vector, into which a sequence of the invention has been inserted, in a forward or reverse orientation. In a preferred aspect of this embodiment, the construct further comprise regulatory sequences, including, for example, a promoter, operably linked to the sequence. Large numbers of suitable vector and promoters are known to those of skill in the art, and are commercially available. The following vectors are provided by way of example; Bacterial: pQE70, pQE60, pQE-9 (Qiagen), pBluescript® II KS (Stratagene), ptrc99a, pKK223-3, pDR540, pRIT2T (Pharmacia), Eukaryotic: pXT1, pSG5 (Stratagene), pSVK3, pBPV, pMSG, pSVL, SV40 (Pharmacia).

Please amend the paragraph beginning at line 11 on page 18, as follows:

Colonies containing pBluescript® plasmids with random inserts from the organism *Thermococcus alcaliphilus* AEDII12RA were obtained from an original λZAP2 genomic library generated according to the manufacturer's (Stratagene) protocol. The clones were then excised from λZAP2 from pBluescript®. The clones were excised to pBluescript® according to the method of Hay and Short. (Hay, B. and Short, J. *Strategies*, **1992**, 5:16.) The resulting colonies were picked with sterile toothpicks and used to singly inoculate each of the wells of 96-well microtiter plates. The wells contained 250 µl of LB media with 100 µg/ml methicillin, and 10% v/v glycerol (LB Amp/Meth, glycerol). The cells were grown overnight at 37°C without shaking. This constituted generation of the "Source GeneBank"; each well of the Source GeneBank® thus contained a stock culture of E. coli cells, each of which contained pBluescript® plasmid with a unique DNA insert.

Please amend the last paragraph of page 18, which extends to page 19, to read as follows:

The plates of the Source GeneBank were used to multiply inoculate a single plate (the "Condensed Plate") containing in each well 200 ul of LB Amp/Meth, glycerol. This step was performed using the High Density Replicating Tool (HDRT) of the Beckman Biomek with a 1% bleach, water, isopropanol, air-dry sterilization cycle in between each inoculation. Each well of the Condensed Plate thus contained 10 to 12 different pBluescript® clones from each of the source library plates. The Condensed Plate was grown for 16h at 37°C and then used to inoculate two while 96-well Polyfiltronics microtiter daughter plates containing in each well 250 ul of LP Amp/Meth (without glycerol). The original condensed plate was put in storage – 80C. The two condensed daughter plates were incubated at 37C for 18 h.

B. In the Claims

Please amend claims 7 and 9 to read as follows:

7. (Amended) The method according to claim 6 wherein the [α-galactose bond] raffinose is in raw beet sugar.

9. (Amended) The method according to claim 8 wherein the compound is contained in a member of the lentil or bean family, or a combination [thereof] of a compound of a member of the lentil family and a compound of a member of the bean family.